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Printing of The Lancet

Outside London, normal printing has been resumed pending the decisions of the Industrial Courts. But in London the printing-houses remain paralysed, and several periodicals have ceased to appear in any form. We trust that an early settlement may enable us to make up for some of the deficiencies of our current issues.

B.C.G.

A report by the Medical Research Council published last week[1] confirms that vaccination with B.C.G. or vole-bacillus vaccine can prevent the clinical manifestations of tuberculous infection, particularly miliary tuberculosis and meningitis. The investigation, which involved 56,700 fourteen-year-old children living in English cities and towns, was well planned, carefully executed, and clearly reported: the results are unequivocal. It is estimated that a general vaccination scheme of children of this age should reduce tuberculous morbidity between the ages of fourteen and seventeen by about half; and the more serious types of disease might be reduced even more, for in the M.R.C. investigation meningitis or miliary tuberculosis developed in none of the vaccinated children but in 6 of the unvaccinated.

This investigation will provide valuable information and encouragement to those concerned with the public health, both in this country and (which is more important) in the less highly developed countries where vaccination is the only effective measure that can at present be applied. Yet, as the report points out, "although it is now more than thirty years since B.C.G. vaccine was first used in man" this "is the first controlled trial of the vaccine to be undertaken in Great Britain,"; and many of us will long regret that we did not press for such a trial sooner. When it was eventually undertaken in 1950, B.C.G. had already been in use in many countries since its introduction in France twenty-six years previously[2]: and though much of the published evidence of its value was invalid, and justified the initial scepticism with which it was regarded, there had also been several extensive planned investigations almost all of which suggested very strongly that B.C.G. was useful. None was unassailable; close critical examination showed possible sources of error in each. But it now seems that too much attention was paid to the fact that bias had been introduced into these trials; and not enough attention was given to the possibility that this bias had not materially affected the results. Prof. JOHN FRANCIS, who insisted in 1949 that what was needed was not so much an adequate trial of B.C.G. as a campaign for its use, argued that exceptionally severe criteria of efficacy were being applied, in Great Britain, to this vaccine: "the evidence supporting the value of B.C.G.," he said, was "better than the evidence supporting the value of any other immunological procedure used in man."[3] Certainly, it has long been better than the evidence in favour of the poliomyelitis vaccine shortly to be offered to the public.

1. *Brit. med. J.* Feb. 25, 1956, 413.
2. Calmette, L.C.A., Guérin, C., Weill-Hallé, B. *Bull. Acad. Méd. Paris*, 1924, **91**, 787.
3. *Lancet*, 1949, ii, 549, 1105.

In 1949 the Ministry of Health, who control the manufacture and distribution of B.C.G. vaccine, allowed it to be used routinely in those exposed to special risks; and later they permitted vaccination of school-children not exposed to special risks—stating, however, that, in order not to interfere with the M.R.C. trial, "any extension of the present B.C.G. vaccination scheme should not include young adolescents aged 15 to 18".[4] But, as we pointed out,[5] vaccination of children and adolescents will not prevent infants dying from tuberculous meningitis. Of the children in the M.R.C. trial 40% had already been infected by the time they were fourteen. Even at thirteen—the age at which school-children are now vaccinated—it is likely that at least 1 in 5 will already be infected: at birth none are infected. Last year we suggested that B.C.G. vaccination should be made available to all who wanted it, and that the practising doctor, who bears a more direct responsibility than public-health authorities for the health of those under his care, should be free to decide whether his patients should have B.C.G.[6] We hope that vaccination has now been offered to the unvaccinated volunteers in the M.R.C. trial who are still uninfected.

Iron Foundries

REGULATIONS which should promote health, safety, and welfare in iron and steel foundries[7] came fully into operation at the beginning of this year, and the first report[8] of the Joint Standing Committee on Conditions in Iron Foundries is timely, because it makes practical suggestions about the control of dust and fume.

The founding of metal is an ancient craft—so ancient that, under the weight of tradition, both employers and workers have regarded the hot, dusty, and dangerous conditions as inevitable; and the campaign for better working conditions did not begin in this country until the late 1930s. A leading article which we published at that time[9] was based partly on American experience and partly on observations by doctors in the Factory Department and the Silicosis and Asbestosis Medical Board. Ever since then the Factory Department has kept up steady pressure, and during the war the Chief Inspector set up two joint advisory committees, one for steel and the other for iron foundries. About the same time a survey of the health risks of iron and steel foundry workers was begun by the Factory Department in conjunction with the Medical Research Council's department for research in industrial medicine directed by Dr. DONALD HUNTER at the London Hospital. The results of this survey,[10] of which Dr. A. I. G. MCLAUGHLIN was in charge, were published in 1950. In 1947 a very thorough report[11] from the Joint Advisory Committee

4. Memorandum 324/B.C.G., Nov. 5., 1953.
5. *Lancet*, 1954, ii, 178.
6. *Ibid*, 1955, i, 757.
7. The Iron and Steel Foundries Regulations. S.I. 1953, no. 1464.
8. First Report of Joint Standing Committee on Conditions in Iron Foundries, 1956. H.M. Stationery Office. Pp. 73. 4s. 6d.
9. *Lancet*, 1938, ii, 629.
10. McLaughlin, A. I. G., et al. Industrial Lung Diseases of Iron and Steel Foundry Workers. 1950. H.M. Stationery Office.; see *Lancet*, 1950, ii, 576.
11. Report of Joint Advisory Committee on Conditions in Iron Foundries. H.M. Stationery Office. 1947.

on Conditions in Iron Foundries, which had the late Mr. H. E. CHASTENEY, H.M. Chief Inspector of Factories, as its chairman, led to the creation of the Joint Standing Committee. The latter [6] has made many investigations into practical methods of dust and fume control, which are described and illustrated in its report. Until 1943 the known cases of pneumoconiosis in iron foundry workers were few; and indeed, until the results of the survey by MCLAUGHLIN and his co-workers became known, they were excluded from the compensation schemes for silicosis under the Workmen's Compensation Acts. The difficulty about bringing them under such a scheme was partly due to the fact that hitherto the classical silicotic nodule had dominated the study of the pathology of the industrial diseases of the lungs. Any case in which classical silicotic lesions were not found could not be diagnosed as silicosis and hence was not eligible for compensation. The new pathological studies, however, showed that the main lesion in the lungs of iron foundry workers (particularly iron fettlers or dressers) was another type of nodule with a linear and radial pattern as opposed to the whorled arrangement of fibres in the classical silicotic nodule. To this type of lesion HARDING, GLOYNE, and MCLAUGHLIN applied the term "mixed dust pneumoconiosis" or "mixed dust fibrosis." When it was established that iron foundry workers did contract pneumoconiosis they could be brought under the compensation schemes, and this emphasised the need for more intensive efforts to control dust and fume.

The engineering section of the report deals, among other things, with the control of dust and fume in pedestal, surface, and swing frame grinding, in fettling with the pneumatic chisel, and in "knocking out" the castings from the sand moulds in mechanised, light, and heavy and jobbing foundries. The methods of dust control by water are described and in particular a new type of wet decoring bar. As regards cupola furnaces, various types of spark arresters are discussed, and also the evolution of, and control of, carbon monoxide and sulphur dioxide. Original work in this connection has been done on heating and core stoves, and also on mould drying by various appliances. The electric mould dryer is regarded as the best type, because less fumes and gas are evolved when it is used.

The Joint Standing Committee has also given attention to the irritable and objectionable fumes which may be given off when certain kinds of binders are used in core making, such as synthetic resins and oils. New foundry processes such as shell moulding and the carbon-dioxide process of mould and core-making are mentioned. These two processes are spreading rapidly in foundries and are likely to revolutionise the industry. Because there is less burning-on of sand on the moulds, the risks associated with the fettling of castings are reduced; but the new methods might bring with them other health risks.

We welcome the report as an indication that much time and energy has been directed to minimising the risks to life and limb of the workers of one of Britain's most important basic industries. And it is pleasing to note that the effort is a concerted one by employers, trade-unions, and Government departments, and by doctors and engineers.

Mental Health and the Schools

IN recent years we have come to understand something of the relation between the training of children and their health in later life. Psychological investigation has displayed the primary importance of the parent-child relationship especially in the early years, and we are now beginning to extend this scrutiny to the child's relationships with subsequent parent substitutes of whom the teacher is commonly the most influential. For a very long time schools were adult-centred: pupils were expected to behave as though they were merely undersized adults and obliged to conform completely to grown-up standards of behaviour. But the insights which psychologists and brilliantly intuitive educational practitioners like Madame Montessori have turned upon the learning situation and the teacher-child relationship have already wrought a great change. Schools are now progressively child-centred, and norms of achievement, development, and discipline are related to pupils' real needs and abilities. But this advance is of course by no means universal, and there is room for further experiment. Such conferences as the one organised by UNESCO in Paris in 1952, of which a report is now published,[1] show how much has still to be learnt and done.

A smaller follow-up study,[2] dealing exclusively with the periods of possible stress in British primary schools, outlines the steps needed to safeguard younger children, and again draws attention to the conception of education as a partnership between home and school, parents and teachers. Its authors have no doubt that parent-teacher associations help to promote such a partnership, enabling teachers to pass on to parents "something of what they have learned . . . for in regard to their own children parents are incomparably the most influential teachers." While this latter statement may be questioned—not least by parents—there can be no denying that parent-teacher associations are often valuable. Some feel, indeed, that it is one of the weaknesses in the present British system that in many parts of the country the decision whether or not an association shall be formed is left entirely to the discretion of the head teacher, whose own faulty emotional attitudes may prejudice him against too close a partnership with the parents of his pupils. But as the advantages of such a partnership are demonstrated, and it becomes more familiar, the opposition is likely to fade.

The British report directs special attention to the stress and strain that the selective nature of the 11+ transition period has on primary school life. The coming secondary-school entrance examination looms ahead, like a huge question-mark overshadowing a child's present and future. Where he comes from an ambitious and over-anxious home the strain of this period may become excessive and lead to mental breakdown and acute anxiety. Parents, children, and teachers alike become involved in the general anxiety, each stimulating the other until the child is so worried that he is unable to do himself justice in the examination itself. There will be no way to avoid this time of stress and strain in primary school-education until the system itself is modified. Fortunately there are signs that some local education authorities are taking steps to reduce the feelings of inequality between pupils with differing gifts and between schools with different curricula. Bilateral, multilateral, and comprehensive schools are possible means of reducing this tension and of killing the purely snob value of a grammar-school education. An improved system of selection and more accurate psychological assessments would also go a long way to produce a fairer outcome and to allay widespread anxiety. But, as the report concludes, "a reduction in the number of children for whom any one teacher is responsible is perhaps the most urgent single reform in education in England today." Its urgency is evident when one pauses to realise that the future of the nation depends increasingly on the quality of the day-to-day teaching and the personal relationships of the teachers and the children in our schools.

6. The members are: Mr. T. W. McCullough (chairman), Mr. Colin Gresty, Mr. A. E. Pearce, Mr. E. C. Happold, Mr. P. Leonard Gould, and Mr. H. V. Shelton (employers' representatives); Mr. J. Gardner, Mr. A. Hardy, Mr. J. Higham, Mr. J. H. Wigglesworth (trade-union representatives); Mr. J. Dobson and Mr. J. Owen (Iron and Steel Board representatives); Mr. W. B. Lawrie, Dr. A. I. G. McLaughlin, and Mr. W. A. Attwood (secretary) (Factory Department representatives).

1. Education and Mental Health. UNESCO. London: Harrap. 1955. Pp. 334. 17s. 6d.
2. Periods of Stress in the Primary School. London: National Association for Mental Health. 1956. Pp. 38. 3s.

Annotations

RESTRICTION OF ANTIBIOTICS?

ON Jan. 28 we discussed the New Zealand government's decision to restrict the use of erythromycin so as to conserve its efficacy against infections resistant to all other antibiotics. In considering what policy might be evolved to ensure the best use of antibiotics, we made no mention of one important interest—that of the manufacturers. Some manufacturers have done their utmost to ensure wise use of the powerful drugs they introduce; and they have sometimes done the public and the profession a service also by refraining from putting a new drug on the market when the medical evidence was not entirely in its favour. By maintaining high standards in these matters a firm may lose a lot of money, and full credit should be given likewise to those who do not over-optimistically broaden their claims for antibiotics, or hint (with the help of quotations from medically qualified but uncritical observers) that there is scarcely an infection in which their product is not worth a trial. Equally we should be grateful to firms who act with restraint when they find themselves in possession of "new" antibiotics whose claims to novelty may be slight. Some of the drugs which have appeared under new names have in fact so much in common with established antibiotics that there is no real justification for bringing them forward. Indeed they may do actual harm by increasing the number of organisms resistant to drugs already in use. There is some evidence, for example, that this may be happening in France with a drug which closely resembles erythromycin and has no clear advantages over it. Fortunately, this antibiotic has not appeared on the market in this country, for our manufacturers have wisely stayed their hand.

The drug firms, perhaps, can do more than anyone else to teach doctors how best to use antibiotics, and they certainly have the information necessary to regulate the supply in such a way as to discourage the emergence of resistant organisms. Such regulation, however, could involve heavy financial sacrifice, and if certain antibiotics are to be "rested", by agreement, from time to time, arrangements will have to be devised for compensating the firms thus penalised in the public interest.

VENOUS ULCERS

IT is custom to label as "venous" those ulcers which persist or recur above the inner malleolus and which are surrounded by pigmented and atrophic skin. Often a cause for the ulceration is readily found—for example, a previous "white leg" or grossly incompetent varicose veins. But sometimes the cause is uncertain or is presumed to be a silent phlebitis or venous incompetence due to deficient valves.

Why these ulcers develop almost exclusively around the internal malleolus has never been very convincingly explained. Cockett[1] believes the venous anatomy of this region may offer a clue. From his studies on cadaver dissections he describes a large constant "posterior arch" vein which winds from the internal saphenous vein down the posterior aspects of the inner calf, superficial to the deep fascia, to anastomose finally with a series of small venous arches. These small arches feed into three perforating veins which pass through the deep fascia above the internal malleolus and empty directly into the posterior tibial veins. Although there is some variation in his dissected specimens, the perforating veins are short and reasonably large vessels, whose valves are so arranged that blood normally flows inwards from the subcutaneous tissues through to the subfascial veins but not in the reverse direction. It is thus suggested that in the erect position the major venous outflow from the ulcer-bearing area is directly into the deep veins via the perforating veins and not, as holds for the rest of the skin of the leg, into the saphenous system. It follows that the small vein arches may be distended via the "posterior arch" vein from an incompetent internal saphenous vein or from the deep venous system, should the valves in the perforating veins become inefficient.

Cockett's thesis is that venous ulcers and associated induration of the lower leg are usually due to destruction of the valves of these ankle perforating veins, and an operation designed to interrupt them is a logical step in the treatment of these ulcers. Patients should be carefully selected: the older patients and those with long-standing ulcers in whom the whole of the lower third of the leg is strangled in a mass of indurated fibrous tissue are excluded and treated by the well-established methods of supportive bandage and massage.

In the 200 "selected" patients on whom Cockett has operated, a straight incision was made one finger's breadth behind the posterior margin of the tibia from midway between the knee and ankle down to 1 in. above the internal malleolus. This included an excision of the ulcer and any doubtful skin. Any large subcutaneous veins were dissected out and followed up and down. They led to one or other of the perforating veins and most commonly the upper and middle ones were found enlarged. These were then ligated flush with the deep fascia and the whole plexus of subcutaneous veins excised. Any large veins which diverged from the area of the incision to join the saphenous system or other perforators were followed and removed if necessary through separate incisions. Excessive undercutting of the skin was avoided since this leads to extensive skin necrosis, a complication which may take longer to heal than the original ulcer. In 135 operations for ulcers unassociated with superficial varicose veins, incompetent ankle perforators were present in 96. In 54 cases in which the ulcer was associated with varicose veins, an incompetent perforating vein which contributed to the persistence of the ulcer was present in 36.

In a condition where many methods of treatment have been advanced only to disappoint, Cockett is commendably cautious about his results. The follow-up period is still short but the early results are promising.

1. Cockett, F. B. *Brit. J. Surg.* 1955, **43**, 260.

ALCOHOLISM ON THE CONTINENT

IN its second number,[1] the *International Journal on Alcohol and Alcoholism* includes two contributions which throw important light on the extent of and the reasons for the recent increase in alcoholism on the Continent.

An article by Hans Seidel discusses the development of alcoholism in the German Federal Republic since the war and shows that alcohol consumption in Western Germany, especially consumption of Branntwein (the German brandy product), has once again almost reached the high figures of the immediate pre-war years under the Nazi régime. In the past few years, in the wake of the spectacular economic recovery of the country, "a kind of forced, hothouse alcoholism has come to the fore." Seidel regards this to some extent as a consequence of the systematic drinking during the war in the Army, as well as in other National Socialist organisations. Large quantities of French hard liquor were sent to the German army during the Russian winter campaigns. He also mentions the accumulated demand for stimulants after post-war shortages and privations. Above all, however, he explains the present "hasty, unquiet and ostentatious form of drinking" as an expression of widespread inferiority feelings arising out of the social and political upheavals following the war.

Alcoholism, Seidel suggests, is closely connected with the appalling figures of road accidents in Western Germany; as high a proportion as 25% of road deaths has been attributed by some experts directly or indirectly to alcohol consumption. The number of habitual alcoholics in Western Germany is placed at between 180,000 and 200,000 or something over 4 per 1000 of the population. But it seems that little effort is being made to tackle the situation. Modern methods of treatment are said to be little used and difficult to enforce; the number of beds in non-mental hospitals is described as hopelessly inadequate for systematic treatment, and social-insurance authorities are extremely reluctant to meet the cost of lengthy treatment.

Dr. Gabriel Mouchot gives some of the background to recent steps by the French government to combat alcoholism,[2] and he assesses their scope and prospect of success in a rather sarcastic way. "It is easy," he declares, "to drive a coach and four through recent liquor legislation," for the law cannot do much unless backed by public opinion, and "almost everyone in France thinks that wine, or brandy, or whatever he drinks is good for him!" Alcohol producers moreover, are numerous, rich, and powerful. Several million Frenchmen depend on drink for their daily bread; millions of acres are covered by vineyards. In the circumstances, few politicians and certainly no government which hopes to remain in power are likely to possess the hardihood to tackle the root problem—over-production. "So long as we have no precise ideas,"

1. October, 1955.
2. See *Lancet*, 1955, ii, 1083.

Dr. Mouchot continues, "how and where to resettle the wine producers, publicans, still-owners and others who would become redundant, it is childish to expect politicians to do anything." Meanwhile, the consumption of alcohol per head in France is the highest of any nation (Italy is second) both absolutely and in relation to national income. The total consumption in France is three times that in Great Britain.

Lest this comparison lead to unjustified feelings of complacency, it is as well to remember that (according to the latest available returns) no fewer than 50,000 persons were convicted of simple or aggravated drunkenness in 1953 before magistrates' courts in England and Wales.

STREPTONIVICIN

A NEWLY discovered antibiotic, streptonivicin (albomycin, 'Albamycin'), is produced by an actinomycete, *Streptomyces niveus* (*Actinomyces subtropicus*). By comparing ultraviolet absorption curves, Welch and Wright[1] have shown that streptonivicin is identical with two other new antibiotics, cathomycin ('Cathocin') (obtained from *Streptomyces sphaeroides*) and 'Cardelmycin' (crystallinic acid). Streptonivicin has been known to Soviet workers for about five years but has only lately become available in the West. It was first isolated in 1951 by Gause and Brazhnikova,[2] of the Institute for Antibiotic Research in Moscow. They obtained it from cultures of *Actinomyces subtropicus*, and named it albomycin. The antibiotic has been investigated in the United States under the name streptonivicin. It inhibits the growth of gram-positive cocci, chiefly pneumococci, staphylococci, and *Streptococcus pyogenes*, and what is equally important it inhibits the growth of sensitive organisms resistant to other antibiotics, including penicillin, streptomycin, the tetracyclines, and erythromycin[3]. Resistance to streptonivicin can, however, develop. It is also effective against a number of gram-negative bacteria, such as Friedländer's bacillus and the coli-dysentery group, klebsiella, *Aerobacter aerogenes*, and *Micrococcus pyogenes* (which is highly sensitive). Rather less sensitive are meningococci and *Hæmophilus pertussis*. *Mycobacterium tuberculosis* is insensitive. The pure substance inhibits the growth of staphylococci at a dilution of 1 in 700 million; the figure for penicillin is 1 in 80 million. Brazhnikova et al.[4] found that streptonivicin is a basic compound forming an amorphous red sulphate, readily soluble in water, slightly soluble in methanol, but insoluble in other organic solvents. The pure substance contains 4·16% iron, which can be removed by treating with acetone containing hydrochloric acid, but this treatment reduces its antibiotic activity. It is thought that the iron is chelated to the hydroxy group in serine, which is part of the molecule. On hydrolysis a number of amino-acids are formed. Streptonivicin appears to be a complex metal-containing polypeptide with a molecular weight of about 1300. Chromatography shows that the constituent amino-acids are ornithine, serine, glutamic acid, alanine, glycine, and another unidentified one. A solution of the antibiotic is stable for only two days.[5]

Since streptonivicin inhibits the growth of sensitive bacteria only in the presence of oxygen, it may interfere with the oxygen-transporting iron-containing enzyme in susceptible bacterial cells.[6] Its chemical structure is possibly related to this enzyme, with which it may compete in a respiratory-enzyme system. Pharmacologically streptonivicin seems to be inert; it produces no local reactions, and, like penicillin, is of extremely low toxicity. A mouse, for example, tolerates a dose of 50 million units per kg. body-weight. No effect on the liver, kidneys, or hæmopoietic system has been observed in patients given the antibiotic. A remarkable property of streptonivicin is its ability to form a reversible complex with serum-proteins, which facilitates its circulation in the body.[2] This complex has chemotherapeutic properties, but unfortunately it interferes with the assay of the antibiotic in the blood. The serum-proteins, which bind about 90% of a single dose of streptonivicin, must be precipitated by trichloracetic acid before the assay is made. The protein-streptonivicin complex apparently dissociates in vivo, because it is active when injected intraperitoneally into mice infected with pneumococci or dysentery bacilli, whereas in vitro it has no effect on these organisms.[7] Since this complex is not readily excreted by the kidneys, an initial dose of streptonivicin is slowly excreted. After repeated injection the amount excreted rises sharply because the serum-proteins have become saturated and free antibiotic circulates in the blood. The free streptonivicin is excreted for six to eight hours after injection.[8] The antibiotic is absorbed in man if given by mouth, and doses of 0·1–0·5 g. six-hourly produce effective blood-levels. There is, however, great variation in the concentration in the serum, a fact for which there is no ready explanation. The drug appears in the bile and in ascitic and pleural fluids, but not in the cerebrospinal fluid.[5]

Mice infected with 500,000 lethal doses of pneumococci show 100% survival-rates after a single subcutaneous injection of 750,000 units of streptonivicin per kg. Mice infected with various strains of staphylococci and hæmolytic streptococci have also been successfully treated. There seems to be a synergistic action with penicillin and streptonivicin. Turning to the clinical use of streptonivicin, in Russia[2,4] it has been used mainly in the treatment of infections by pathogenic cocci, particularly when they are penicillin-resistant. Intrathecal injections of 100,000–200,000 units gave good results in the treatment of meningitis due to susceptible organisms. Other uses include the treatment of peritonitis and surgical infections, and penicillin-resistant prostatitis and gonococcal urethritis. We do not know of any other clinical reports and await further news with interest.

1. Welch, H., Wright, W. W. *Antibiot. Chemother.* 1955, **5**, 670.
2. Gause, G. F., Brazhnikova, M. G. *Nov. Med., Mosk.* 1951, **23**, 3.
3. Gause, G. F. *Brit. med. J.* 1955, ii, 1177.
4. Brazhnikova, M. G., Lomakina, N. N., Muravieva, L. I. *C. R. Acad. Sci., U.R.S.S.* 1954, **99**, 827.
5. Martin, W. J., Heilman, F. R., Nichols, D. R., Wellman, W. E., Geraci, J. E. *Proc. Mayo Clin.* 1955, **30**, 540.
6. Shapiro, S. L. *Nov. Med., Mosk.* 1951, **23**, 53.

DIRECT ACTION

On Monday it was stated that about 10,000 nursing staff in 33 mental hospitals have now declared that they will no longer work overtime. They have done this to express their dissatisfaction with their pay and with the conditions of their service, under which longer and longer hours are demanded of a dwindling staff who (unlike people in most other occupations) do not get a higher rate when they come early or stay late.

Working conditions cannot be substantially improved until there are more nurses; but it is hard to find new recruits for an aggrieved profession, and even harder to hold them. In some hospitals, indeed, the turnover of nurses must almost rival the turnover of patients. It is reported,[9] for instance, that in the Manchester region six hospital management committees, with an establishment of 2929, in one year accepted 1842 recruits, but were worse off at the end of it because they had had 1891 resignations. Nor will incidents such as the unfortunate demonstration by nurses at the Ministry of Health's exhibition at Manchester speed the recruiting drive. With the best will in the world on all sides, it will need patience and a different climate of public opinion to provide the extra staff that alone will enable these conditions to be greatly changed.

On the other hand it is obvious that the nurses' other and closely related reason for dissatisfaction—the insufficiency of their pay—could, at a cost, be adjusted immediately; and they complain of the slowness of negotiations in the Whitley Council. That they are not alone in this complaint was shown again in an adjournment debate[10] in the House of Commons when the Whitley Council machinery of the National Health Service was criticised. Negotiations, Mr. Arthur Blenkinsop declared, were delayed because the Treasury insisted that no suggestion should be put forward by the management side without its prior approval. He warmly supported the recommendation of the Guillebaud Committee that the representation on these councils of regional hospital boards and hospital management committees should be increased. At present, as Mr. Herbert Butler put it, the Ministry of Health had interposed Ministry and Treasury officials between the hospital authorities and the council, and in consequence the machinery did not move fast enough to deal with day-to-day problems. Meanwhile, not only in mental hospitals, management committees grow more and more uneasy at their inability to offer rates of pay bearing a reasonable relation to those to be had at the nearby factory or airport.

We note with deepening anxiety the tendency of people in the health service to adopt the mental attitudes and techniques of organised labour, which are often irreconcilable with those of a profession. But in this case, as so often in industry, part of the responsibility for direct action lies with those who tend to delay necessary concessions until these are made urgent by a threat.

7. Shorin, V. A. *Ibid*, p. 7.
8. Judinzev, S. D. *C.R. Acad. Sci., U.R.S.S.* 1954, **99**, 115.
9. *Tribune*, Feb. 17, 1956.
10. *Hansard*, Feb. 8, 1956, col. 1751.

Letters to the Editor

Poliomyelitis Vaccination.—Since I began to work on poliomyelitis vaccine, I have often been asked whether I would have my own children injected with the current type of vaccine. In spite of the official information which has been given, there is still a surprising degree of ignorance of the basic facts about this vaccine, perhaps because its practical development has preceded the publication in this country of the scientific data necessary for its appraisal. It rests therefore with those "in the know" to give what reassurances they can.

I hope that my children, at least those that are eligible, will receive poliomyelitis vaccine this spring. I am satisfied that the vaccine can do no possible harm. Since the revised safety regulations were introduced last summer, reactions and side-effects have been virtually nil in over 10 million children vaccinated in the United States and elsewhere. The safety margin of the vaccine has been widened enormously in the last year, and in this country in three different ways: (1) by using the very much larger volumes of sample for the safety tests, as introduced in the United States last summer; (2) by doing the safety tests in duplicate and independently in two different laboratories; and (3) by using attenuated strains of virus to prepare the vaccine.

Much less certain is the amount of good the vaccine will do. It is hoped to produce vaccine of a standard at least equivalent to that of current American production, which, to judge by the most recent figures, has a protective effect of between 70% and 80%. That is to say, the risk of contracting *paralytic* poliomyelitis for a vaccinated child is about a quarter or a fifth of that for an unvaccinated child. It may be argued that the risk of contracting paralytic poliomyelitis in this country is pretty small. For children aged 2-5 years the chance is about 1 in 3000 in a year that is about average for poliomyelitis incidence. But those who are familiar with the consequences to the individual and to the family of a crippling and fatal illness will wish to lessen that risk for their own family. And this is the advice I think doctors should be giving to their patients and friends.—ALAN GOFFE, M.B. (Wellcome Research Laboratories, Beckenham, Kent).

Remuneration of Doctors.—As a country practitioner I am rather tired of the pious horror with which some of my prosperous colleagues greet our proposals for an increase of pay. Let us be realistic. We are not taking the first plunge into an antisocial debauch of inflation. Instead, we are bringing up the rear in a rather sorry race, which we did not want to start. Does Professor Davis (Feb 18) really believe that our example, at this late stage, will influence electricians, teachers, or railwaymen one way or the other? It seems to me that the true position of our high-minded critics is revealed by a sentence in the last paragraph of Professor Davis's letter: "instead of pressing salary claims . . . obtaining a modification of the present taxation system." I should like to ask which of the two measures would more accelerate inflation—increase of doctors' remuneration, or a general relaxation of taxes for higher-income groups?—M.A. FENTON B.M. (Moreton-in-Marsh, Gloucestershire.)

We should like to support the opinion, expressed by the Royal College of Physicians of Edinburgh (Feb 18, p. 296), that no claim for increased remuneration be submitted at present. We feel that it is the duty of the medical profession, as a responsible section of the community, to give a lead which, we hope, others may follow.—E.G. HALL, M.B.; F.P. HUDSON, F.R.C.P.E., A.E. MCCANDLESS, M.R.C.P.; R.M.TODD, M.R.C.P. (Alder Hey Children's Hospital, Liverpool.)

I should like to add my voice to that of those who consider the present time inappropriate for claiming increased remuneration.—R.D. REID, M.B. (West Mersea, Essex.)

Factory in a Hospital.—I would agree with Dr. Rollin and Dr. Watkin (Feb 18) if I had claimed that the factory had cured any of our patients, or that it would, by itself, lead to the discharge of any number. I made no such claim. My intention was to provoke discussion of the issues which the factory project, with other social changes, raises. Many of our long-stay patients are harmless, and if they can be trained to be self-supporting it would seem unnecessary for them to remain in hospital. Changes in the law and the recent introduction of non-statutory beds, together with the "open-door" policy, have helped to show the public that the psychotic patient rarely needs isolation because of dangerous behaviour. If we can show that even the deteriorated patient can be useful to the community, yet another source of prejudice will be removed.

Most psychiatrists working in mental hospitals complain of the overcrowding, and this has led to a demand for new building and more hospitals. Schizophrenia is a chronic illness with frequent relapses; but so are peptic ulcer, bronchitis, and rheumatoid arthritis. If patients with these diseases were kept in hospital for fear of relapses and because of the risk of "accidents" if they left, the general hospital, too, would soon be overcrowded.

More patients will leave the mental hospital only if there is a change in the attitude of society so that room is made for them in the community. Our factory may help to stimulate such a change—A.A. BAKER, M.D. (Banstead Hospital, Sutton, Surrey.)

Too Much Barbiturate?—We also have encountered some of the complications mentioned by Miss Brooke (Jan. 21), such as chronic barbiturate intoxication, barbiturate addiction, and severe withdrawal manifestations, including grand-mal seizures and a picture closely resembling delirium tremens. We have in the last few years investigated new types of hypnotic-sedative drugs unrelated to the barbiturates. These included methylpentynol, α-phenyl-α-ethyl glutarimide, 2, 4-dioxo-3, 3-diethyl-methyl-piperidine, and 1-ethinyl-cyclohexyl carbamate. So far we have found these drugs quite satisfactory, although the observation period is obviously much too short to make any definite claims. Exercise of restraint in the prescription of any hypnotic is obviously the most satisfactory solution; but it is important that the use of these new compounds has enabled us to dispense with barbiturates (for insomnia) altogether in the ward concerned for the past eighteen months.—M. M. GLATT, M.D. (Warlingham Park Hospital, Warlingham, Surrey).

Protophrenia—Dr. Bourne's letter (Feb. 4) is an astonishing mixture of misquotations and fantastic distortions of statements I made in earlier letters. According to him, I said that "only feckless parents would seek hospital care for an imbecile child if he looks anatomically normal." What I really said was: "few parents of a normal-looking child below school age who can walk and can control his sphincters will agree to have him certified as a mental defective." I concluded that this circumstance "may explain why almost all Dr. Bourne's 'residual' cases have feckless or otherwise unsuitable parents." Not I, but Dr. Bourne, showed that almost all his "residual" cases had "feckless or otherwise unsuitable parents." He continues: "Plainly from this, she knows nothing of the burden such a misfortune may bring to a working-class home." I have in fact first-hand knowledge of the burden such a misfortune may bring to people who have to work for their living; I have also discussed this problem with many parents from the Association for Mentally Retarded Children in the U.S.A. and from the Society for Mentally Handicapped Children (S.M.H.C.) in England—many of them "working-class"—who, like me, steadfastly declined to apply for institutional care for their pre-school-age children. Regarding Dr. Bourne's refutation of my second "extravagant" assertion—that his proportion of residual cases was unduly small—I can only advise him to visit a few outside children's parties arranged by groups of parents in the S.M.H.C. He will then see that a high proportion of the under-fives (or sixes) look completely normal. His question: "which outpatients?" is thus easily answered.

Dr. Bourne says that my theories directly contradict my previous statement. Why? Because I stated that these children look normal but that most of them reveal to the expert signs of neurological disturbances? I did not say "all," as Dr. Bourne asserts. He goes on to say that my clinical signs of organic disease "are only to be found by the esoteric methods of neurological examination prescribed in her unpublished papers." I described several of these well-known signs in my letter and referred to others published in two English journals accessible to everybody. Finally Dr. Bourne declares that he has read my other letters to the medical press. But when reading his comments I started wondering how he could possibly have read them. Where did he take it from that "A single child's case was enough to convince her that defect arises not from inadequacy of the

higher cerebral centres but from the midbrain." I wrote (*Lancet*, 1950, i, 881): "My observations (in my work with mentally handicapped children) have strengthened my belief that many mental defects are the result of unrecognised birth hæmorrhages affecting tributaries of the vein of Galen and injuring ganglia of the mesencephalon and telencephalon." And where did Dr. Bourne read that "the vital lesion lay constantly in the corpora quadrigemina and the lateral geniculate bodies"? I wrote: "Pathological changes in the above-mentioned ganglia (i.e., the corpora quadrigemina and the corpora geniculata) and in their afferent and efferent tracts may play one of the most important roles in the causation of mental defect" (*Brit. med. J.* 1953, i, 936). And in a later letter (*Brit. med. J.* 1953, ii, 392) I stated explicitly: "My topographical reference embraces the whole length of the visual and auditory pathways from receptor organ to cerebral cortex. This shows that my hypothesis is not primarily concerned with the actual anatomical level affected by the impairment, but with the circumstance that mainly or even exclusively disturbances affecting to some degree the integrations of the visual or auditory system will lead to a mental defect." One can hardly be more precise in regard to the widespread possibilities of localisation.—LISE GELLNER, M.D. (St. Lawrence's Hospital, Caterham, Surrey.)

Deaths During Anæsthesia.—In your annotation (Jan. 21) you say that "about 8 million" anæsthetics were given in the hospitals of England during 1954. The figure is presumably taken from the Ministry of Health's report, and owing to your omission of the words "alone or in combination" a total considerably in excess of the true one has been achieved. The correct total is obtained by multiplying the total number of operations for the sample week—56,062—by 52 (or more accurately 51 owing to bank holidays). This gives a grand total of some 2,860,000 operations for the year, each operation involving the use of about 2·3 anæsthetic agents (oxygen having been excluded as an anæsthetic). This total of 2,860,000 anæsthetics does not of course include operations in nursing-homes, maternity cases, and dental anæsthetics; and I do not suppose that the number of these can ever be computed. But it is very gratifying to learn that the total number of deaths under anæsthesia continues to diminish.—MASSEY DAWKINS, F.F.A. R.C.S. (London, W.1.)

Intragastric Milk Drip.—I must apologise to Dr. Watkinson and Dr. Chandler (Jan. 28) for not quoting their paper more fully, but this seemed unnecessary as I was merely investigating the use of a Ryle's tube in predicting massive gastro-intestinal hæmorrhage. They wrote (*Lancet*, 1953, ii, 1170): "The bedside observation of bloodstaining in the aspirated specimens was useful because further hæmorrhage could be detected before other clinical criteria had indicated its presence." Unfortunately, this is not supported by my experience (Jan. 14).

I was surprised to see the resurrection of that hoary old red-herring, the overall death-rate: I thought that this had been decently buried in 1947 (F. Avery Jones, *Brit. med. J.* 1947, ii, 441, 477). Suffice it to say that in Chandler and Watkinson's published series 8.5% of the patients were older than 70; in my series 19% of the patients were older than 70, and of the 8 deaths 6 were in this group.—A. M. DAWSON, M.R.C.P. (Central Middlesex Hospital, London, N.W. 10).)

"Infectious Roseola".—Dr. Fletcher reports (Jan. 7) that in Sarafand in August and September, 1941, "some fifty cases of what I termed (for want of a better name) 'infectious roseola' occurred .... Similar small outbreaks were noted in the surrounding district." During the same period in Tel Aviv, notably in the suburbs, I saw some hundred patients with apparently the same disease. (We knew of the outbreak in Sarafand.) We described the outbreak as "an unknown epidemic infectious disease" (M. Leffkowitz, *Harefuah*, 1942, **22**, 3). The picture was identical with that reported by Dr. Fletcher. The incubation period was 3½–5 days. We, too, suggested that the cause was a virus. In the years 1950–53, particularly in the same districts, there were further outbreaks (P. Radt, *Harefuah*, 1955, **49**, 41). The evidence indicates that the disease was caused by West Nile virus (E. Olejnik, *Bull. Res. Coun. Israel*, 1952, **2**, 210. H. Bernkopf, *Harefuah*, 1953, **45**, 101. N. Goldblum, et al. *Amer. J. Hyg.* 1954, **59**, 89. M. Benyeh. N. Goldblum, *Harefuah*, 1955, **48**, 58). Accordingly the disease has been called West Nile fever.—M. LEFFKOWITZ, M.D. (Belinson Hospital, Petah Tiqva, Israel.)

Unfair to Surgery.—In your issue of Jan. 14 (p. 107) two doctors said that after having several feet of gut removed many years ago for regional ileitis they were "as fit as fiddles." May I add that one of them, not so many months after his titanic operation, climbed the Schreckhorn by way of the N.W. arête I submit that he was then as fit as ten 'cellos.—A. E. STEVENS, M.D. (Jersey, Channel Isles)

Anticoagulants in a Hot Climate.—In reply to Dr. Merskey and Miss Scholtz (Feb. 4), I would point out that the Egyptian summer is much warmer than that at Cape Town (12–22°C). At Suez the temperature may be as high as 41°C. In patients on maintenance doses of phenylindanedione bleeding may occur only on very hot days. The maintenance dose of the drug I use is larger, as I aim at a prothrombin index of 10–30%, and not 40–60%. I agree that moderate heat (12–30°C) does not affect the maintenance dose of phenylindanedione.—ATTIA TAWFIC, M.D. (Suez, Egypt.)

Homosexuality.—Dr. Tuthill (Feb. 11) uses the word "purpose" in relation to sex codes, and implies it in other illustrations. Whose purpose? Are we not often guilty of unwarranted abduction of this word from another system? Do we not usually mean "function"? Sex codes have maintained "the family as a social unit": that, from anthropological study, has evidently been one of their functions. But whose purpose, whose intention, is it that they should? That, surely, is another question altogether, consideration of which may throw a larger light on all codes, by which they may be seen to fail or succeed in fulfilling a good or bad function.—J. N. COZENS-HARDY, B.M. (Holt, Norfolk.)

Inguinal Herniorrhaphy.—Mr. Doran has asked (Feb. 4) how the conjoined tendon contributes to the integrity of the inguinal canal without literally acting as a shutter. May I suggest that the conjoined-tendon muscles do this by resisting anterior (or posterior) displacement of the "primary fixed point." This prevents upward displacement of the "arch." It is perhaps better to regard the conjoined tendon as a "partly closed shutter" in a state of dynamic equilibrium, tending to maintain its vertical position in the face of varying disruptive forces. In this sense, the shutter-like action may be said to occur, though paradoxically it moves little if at all. Unchecked, the arch would rise as much as an inch in a person of average build. This does not happen of course, and the function of the conjoined tendon may be deduced from what does not happen. If this is so suture of conjoined tendon to inguinal ligament may so far displace the arch below its position of equilibrium that the muscles of the conjoined tendon would themselves tend to pull the arch upwards. This effect should be only partly compensated for by relaxing incisions in the rectus sheath.—J. F. ROBINSON, M.B. (London, W.11.)

Obituary

Mr. G. E. NELIGAN

George Neligan was one of those men who give life to institutions: and the corporate spirit of old students of the London Hospital owes much to his example in treating any Londoner as a personal friend. He went to the hospital from Oxford in 1907, qualified in 1910, and was surgical registrar in 1914. Returning to the same post in 1919, with a Military Cross, he became assistant surgeon ("Howard and Neligan") in 1922, specialising in urology. He did much to organise and build the students' hostel, and in the late war he lived in the hospital with the title of medical superintendent—a cheerful and reassuring figure. After his retirement to Walmer in 1951, he was brought back to preside at the London Hospital dinner in 1953 when he was given an ovation. The hospital and its students, it was said, had never had a better or more generous friend: in all his years his attitude had been "with malice toward none and charity toward all". He died at Folkestone on Feb. 24, aged 71.

We regret to record also the death of Mr. HAROLD KING, D.SC., F.R.S., formerly of the National Institute for Medical Research.

In England Now

There is nothing like being a patient in your own hospital to solve the mysteries of your work. For years I have been puzzled by the regular, if rare, arrival in the anæsthetic room of a patient with a full stomach. Elucidation came to me as I was lying in bed, pleasantly drowsy from my premedication, awaiting the arrival of the theatre trolley. A cheerful patient appeared round the curtain.

"Here y'are guv, a nice cuppa tea with sugar an all"

"No thanks" I replied; "I'm just going to the theatre and they don't let you drink".

"Now look 'ere chum", the tempter persisted; "It ain't the surgeons who are keen on this no food racket, it's only the anæsthetists and no one takes any notice of them."

"Too true," I agreed sleepily, "I am one."

* * *

Our hospital general typists' office is typical of the Welfare State—no pen and no inkpots, but two teapots, one coffee-pot, and countless milk bottles.

Parliament

At the standing committee on the Clean Air Bill on Feb. 21 Mr. Enoch Powell, parliamentary secretary to the Ministry of Housing and Local Government, said it was proposed that the appointed day for the prohibition of "dark smoke" from any chimney should be early in 1958. The Bill provides that for seven years after legislation is passed exemptions shall be given when smoke is caused by the nature of a building or its equipment and not by failure to maintain them properly. Mr. A. L. Blenkinsop felt that with this exemption there would be little or no sense of urgency in the campaign to end air pollution, but an Opposition amendment to reduce the period to three years was turned down.

The Secretary of State for Scotland announced that as part of a two-year campaign against tuberculosis he had invited Glasgow Corporation to conduct a city-wide survey by mass radiography in March, 1957. Besides the 10 mass-radiography units normally in use in Scotland, 20 more would (he hoped) be lent by England and Wales for five weeks. The other three Scottish cities, and many areas in the industrial belt, would later be offered facilities for similar surveys.

The Minister of Labour has announced that, on the advice of the Industrial Health Advisory Committee, a pilot industrial health survey is to be made of the pottery industry. Last year it was announced (see *Lancet*, 1955, ii, 610) that a similar pilot survey would be made at Halifax.

News

Prof. A. C. Frazer's Oliver-Sharpey lectures, at 5p.m. on March 13 and 15, to the Royal College of Physicians of London will deal with Intestinal Absorption in Man.

The fellowship of the Royal College of Surgeons in Ireland has been conferred on A. E. O. Williams.

The honorary fellowship of the Royal College of Obstetricians and Gynæcologists is to be conferred on Viscount Nuffield and Sir Ronald Weeks.

Dr. W. S. Walton, medical officer of health for Newcastle upon Tyne and lecturer in charge of the department of public health in the University of Durham, has been appointed to the University of London chair of public health at the London School of Hygiene and Tropical Medicine.

Dr. D. V. Bates, first assistant in the medical unit of St. Bartholomew's Hospital, London, has been appointed associate professor of medicine at McGill University and assistant physician to the Royal Victoria Hospital, Montreal.

Appointments

ELLIS, D. D., M.B. Belf., D.P.M.: whole-time asst. psychiatrist, Winwick Hospital, Warrington, Lancs.

FRASER, R. J. A., M.B. Aberd., F.R.C.S.E.: consultant neurosurgeon, Scottish North-Eastern R.H.B.

FOLEY, MARY M., M.D. N.U.I., D.P.H., D.C.H.: whole-time tuberculosis M.O., Ormskirk H.M.C. area.

HOLLAND, H. W., M.B. Lond., M.R.C.P., D.M.R.: consultant radiologist, Addenbrooke's Hospital, Cambridge.

KERRIGAN, MONICA, M.B. Belf., D.P.H.: senior asst. M.O.H., and school M.O., Dudley.

KINNISH, R. V., M.B. Lpool: whole-time asst. anæsthetist, Doncaster hospitals.

MARSDEN, A. J., M.B. Lpool, F.R.C.S.: part-time consultant general surgeon, Ormskirk group.

TAYLOR, MAVIS B., M.R.C.S.: school M.O., York/Northallerton area.

WISEMAN, ARIANE G. M., M.B. St. And., D.P.H.: asst. M.O.H. and school M.O., Salford.

Births, Marriages, and Deaths

BIRTHS

PERRY.—On Feb. 20, at the County Hospital, Haverfordwest, to Dr. Elizabeth Perry (formerly Thomas), wife of Dr. C. Lynn Perry, —a son, brother for William.

DEATHS

NELIGAN.—On Feb. 24, at the Royal Victoria Hospital, Folkestone, George Ernest Neligan, M.C., F.R.C.S., consulting surgeon, The London Hospital, aged 71.

Vacancies

ACADEMIC AND EDUCATIONAL

Inst. of Psychiatry. Lecturer in Clin. Neurophysiology
University of London. Lectures "Biology Corpus Luteum" 5th & 8th March.
Oxford University. Sr. Research Officer. Lab. of Human Nutrition.
St. Andrew's University. Refresher Course for G.P.'s. 18th–29th June.
Sheffield University. Lecturer in Med.
Sheffield University. Lecturer & Demonstrators in Anatomy.
Royal College of Physicians of London. Oliver-Sharpey lectures. 13th–15th March.
Royal College of Surgeons of England. Faculty of Dental Surgery. Examinership.
University College, London. Public Lecture "Present Status of Enzyme –Forming Mechanism". 5th March.
Hosp. for Sick Child W.C.1 Research Fellow (Histochemistry)
Cambridge. Gonville & Caius College. Berkeley Bye-F'ship.
Durham University & Newcastle United Hosps. Prof. of Med. (Cons.)
Manchester University Fortnight's Course from 28th May, Industrial M.O.'s
Oxford University Asst. Graduate in Path.
Royal Inst. of P.H. & Hygiene. Course of Instruction (C.P.H.) 16th. March.
University of London. Lectures "Future of Pharmacy in Relation to World Needs". 7th & 15th March.
University of London. Chair of Medicine.
Edinburgh University. Lecturer. (Dept. Physiology).

ANÆSTHETICS

North West Met. R.H.B. Cons.
North East Met. R.H.B. P.-t. Cons.
Barrow & Furness H.M.C. Jr. H.M.O.
Birmingham. Dudley Road. Sr. H.O.
Birmingham R.H.B. Cons & P.-t. Cons.
Birmingham United Hosps. Sr. H.O.
Edinburgh Northern Group of Hosps. H.O.
Hitchin Hosps. Locum Sr. H.O.
Manchester R.H.B. P.-t. Cons.
Northampton Gen. H.O.
Oxford United Hosps. Sr. H.O.
Scotland. Western R.H.B. Sr. Reg.
Stafford H.M.C. Sr. H.O.
U.S.A. Cambridge, Mass. Residencies
Worthing Group H.M.C. Reg.

CARDIOLOGY

Westminster, S.W.1 Reg.

CASUALTY

Hackney, E. 9. H.O.
Royal Northern, N.7. Sr. H.O.
Canterbury. Kent & Canterbury. Sr. H.O.
Cardiff. St. David's. Sr. H.O.
Chertsey. St. Peter's. Sr. H.O.
Chichester. St. Richard's. Sr. H.O.
Hemel Hempstead. West Herts. Jr. H.M.O.
Northampton Gen. Sr. H.O. & H.O.
Reading. Battle. H.O.
Weston-super-Mare Gen. Sr. H.O.
Windsor King Edward VII. Sr. H.O.

CHEST AND TUBERCULOSIS

Brompton, S.W.3. H.O.'s
North East Met. R.H.B. Reg.
Paddington Group H.M.C. Reg.
Alton, Henry Gauvain. Sr. H.O.
Benenden San. M.O.
Bristol, Ham Green. Sr. H.O.
Cardiff, Glan Ely. Sr. H.O.
Chelmsford. Broomfield. Locum Sr. H.M.O.
Driffield, Northfield San. Sr. H.O.
Dublin. National B.C.G. Committee. Vaccinator.
Grimsby, Springfield. Reg.
Leeds R.H.B. Sr. Reg.
Manchester R.H.B. Reg.
Scotland. Western R.H.B. Sr. H.M.O.

DENTAL SURGERY

Leeds United Hosps. P.-t. Cons.

DERMATOLOGY

Sheffield United Hosps. Sr. Reg.

EAR, NOSE, AND THROAT

Ashford, Middx. H.O.
Birmingham & Midland Ear & Throat. Sr. H.O. or H.O.
Blackpool. Victoria. Sr. H.O.
Doncaster Royal Infy. Sr. H.O.
Hosp. for Sick Child. W.C.1. Reg.
Hull A Group H.M.C. Sr. H.O.
Hull. Victoria Hosp. for Sick Child. Locum Sr. H.O.
Mid-Glamorgan H.M.C. Sr. H.O.
Newcastle R.H.B. Reg.
Northampton Gen. Sr. H.O.
North West Met. R.H.B. P.-t. Cons.
Portsmouth Group H.M.C. Sr. H.O.
Reading. Royal Berks. H.O.

GERIATRICS

East Anglian R.H.B. Reg.
East Anglian R.H.B. Sr. H.M.O.

HÆMATOLOGY

Sonth West Met. R.H.B. Jr. H.M.O.

INFECTIOUS DISEASES

Sunderland. Havelock Hosp. & Grindon Hall San. Jr. H.M.O.

MEDICINE

Bolingbroke, S.W.11. H.O.
Charing Cross, W.C.2. Reg.
Elizabeth Garrett Anderson, N.W.1 H.O.
Paddington Gen. W.9. Reg.
St. Leonard's, N.1. Sr. H.O.
Whipps Cross, E. 11. H.O.
Ashford, Middx. H.O.
Birmingham. Dudley Road. H.O.
Bournemouth. Royal Victoria. H.O.
Bristol. Southmead Gen. Hosp. Group M.C. Sr. H.O.
Buxton. Devonshire Royal. Sr. H.O.
East Anglian R.H.B. Reg.
Enfield. War Mem. Sr. H.O.
Guildford. Royal Surrey County. Reg.
Hull. Kingston Gen. Pre-reg. H.O.
Huntingdon County. H.O.
Ilford. King George. Pre-reg. H.O.
Leeds R.H.B. Regs.
Luton & Dunstable. Reg.
Maidenhead. H.O.
Manchester R.H.B. Reg.
Portsmouth Group H.M.C. Sr. H.O.
Scotland. Western R.H.B. P.-t- Cons.
Swansea. Mount Pleasant. Jr. H.M.O.
Tredegar, Mon. St. James. H.O.
Worcester Royal Infy. H.O.

OBSTETRICS AND GYNÆCOLOGY

Elizabeth Garrett Anderson, N.W.1 H.O.
Lambeth, S.E.11. H.O.
Birmingham United Hosps. H.O.'s.
Canterbury Kent & Canterbury. H.O.
Cheltenham Maternity. H.O.
Chichester Group H.M.C. Reg.
Derby City. Pre-Reg. H.O. or Sr. H.O.
Derby City. Reg.
Glasgow Southern Gen. Sr. H.O.
Halifax Area Hosps. M.C. Sr. H.O.
Hastings. Buchanan. H.O.
Manchester. Crumpsall. H.O.
Nottingham City. H.O.
Nottingham. Firs Maternity. Sr. H.O.
Portsmouth Group H.M.C. Pre-Reg. H.O.
Reading Combined Hospa. H.O.'s.
Rochford, Essex. Gen. Locum Sr. Reg. or Reg.
Rochford, Essex, Gen. Sr. H.O. & H.O.
Scotland. Western R.H.B. Reg.
Sheffield R.H.B. Sr. Reg.
Shrewsbury Royal Salop Infy. & Copthorne. H.O.
Stoke-on-Trent City Gen. Pre-reg. H.O.'s
Sunderland Royal Infy. H.O.

OPHTHALMOLOGY

St. Thomas', S.E.1. P.-t. Refractionist
St. James'. S.W.12. P.-t. Reg. & Locum Reg.
Broxburn, West Lothian. Bangour Gen. Sr. H.O.
East Anglian R.H.B. Reg.
Exeter Clinical Area. P.-t. Cons.
Leeds R.H.B. Reg.
Leeds R.H.B. Sr. Reg.
Manchester United Hosps. Sr. H.M.O.
Newcastle R.H.B. Locum Cons. or Sr. H.M.O.
Oxford R.H.B. P.-t. Cons.
Oxford United Hosps. H.O.

ORTHOPÆDICS

Queen Mary's (Roehampton) S.W.15. Reg.
Royal National Orthopædic, W.1. Sr. H.O.
South-East Met. R.H.B. P.-t. Cons.
South-East Met. R.H.B. Regs.
Westminister, S.W.1. Sr. Reg. or Reg.
Ashford, Middx. H.O.
Bath. St. Martin's. H.O.
Birmingham R.H.B. P.-t. Cons.
Bournemouth. Royal Victoria. Reg.
Braintree. Black Notley. H.O. & Locum H.O.
Brighton Gen. H.O.
Durham. County. H.O.
Ipswich & East Suffolk. Sr. H.O.
Northampton Gen. H.O.
Portsmouth Group H.M.C. Pre-reg H.O.
Romford. Oldchurch. H.O.
Southampton. Royal South Hants Sr. H.O.

PÆDIATRICS

Hosp. for Sick Child., W.C.1. Sr. H.O.
Birmingham United Hosps. Sr. Reg.
Chelmsford. St. John's. H.O.
Edgware Gen. Reg.
Manchester. Duchess of York Hosp. for Babies. H.O.
Manchester. Duchess of York Hosp. for Babies & Wythenshawe. Sr. H.O.
Northampton Gen. H.O.
Reading. Royal Berks. H.O.
Scotland. Western R.H.B. Reg.
Canada. Child's. Hosp., Vancouver. Residents.

PATHOLOGY

Leeds R.H.B. Sr. H.M.O.
Manchester R.H.B. Reg.
Manchester. West Manchester H.M.C. Sr. H.O.
North East Met. R.H.B. Reg.
Rochford, Essex. Gen. Locum Reg. & Sr. H.O.
Sheffield United Hosps. Reg. or Sr. H.O.

PHYSICAL MEDICINE

North East Met. R.H.B. P.-t Cons.

PSYCHIATRY

Middlesex, W.1. (M.O. Sr. Grade)
North West Met. R.H.B. P.-t. Sr. H.M.O.
North East Met. R.H.B. Reg.
South-East Met. R.H.B. Sr. Reg. & Regs.
South-East Met. R.H.B. Cons.
South West Met. R.H.B. Reg.
St. George's, S.W.1. Sr. Reg.
Aylesbury. St. John's. Jr. H.M.O.
Bury & Rossendale H.M.C. Jr. H.M.O.
Bournemouth, St. Ann's. Jr. H.M.O
Epsom. Horton H.M.C. Reg.
Exeter. Digby/Wonford. Jr. H.M.O.
Leeds Menston (Mental). Sr. H.O. & Jr. H.M.O.
Leeds R.H.B. Regs.
Manchester R.H.B. Sr. Reg.
Oxford R.H.B Sr. H.M.O.
Scotland. Eastern R.H.B. Cons.
St. Alban's. Hill End. Reg.
Wallingford, Berks. Fair Mile. Jr. H.M.O

RADIOLOGY

Middlesex, W.1. Cons.
Colchester. Essex County. Locum Sr. Reg.
Leeds R.H.B. Sr. Reg.
Southend-on-Sea. Gen. Temp. P.-t. Cons. or Temp. Sr. H.M.O.
St. Bartholomew's, E.C.1. Sr. H.O. or Reg.

RADIOTHERAPY

Scotland. Western R.H.B. Reg.

SURGERY

Bethnal Green, E.2. H.O.
Elizabeth Garrett Anderson, N.W.1 H.O.
Hosp. for Sick Child., W.C.1. P.-t. Sr. Reg.
Nelson, S.W.20. H.O.
Norh East Met. R.H.B. Reg.
North West Met. R.H.B' Cons.
Queen Mary's Hosp. for the East End, E.15. Pre-reg. H.O.
South Lodge, N.21 H.O.
South Western, S.W.9. Sr. H.O.
Bath. Royal United. H.O.
Blackburn & Dist. H.M.C. H.O.'s.
Birmingham Accident. H.O.'s
Birmingham Accident Hosp. & Rehab. Centre. Sr. H.O.
Bristol. United Hosps. & South Western R.H.B. Reg.
Canterbury Kent & Canterbury. H.O.
Carshalton. Queen Mary's Hosp. for Child. Reg.
Chelmsford & Essex. Pre-reg. H.O.'s
Edinburgh Central Hosps. B.O.M. H.O.
Edinburgh Northern Group of Hospa. H.O.
Enfield. Chase Farm. H.O.
Halifax Gen. H.O.
Haslemere & Dist. H.O. or Locum.
Hastings. Royal East Sussex. Pre-
Haverfordwest. Pembroke County, War. Mem. Sr. H.O.
Hitchin. Lister. H.O.
Hosp. for Sick Child., W.C.1. P.-t. Sr. Reg.
Huddersfield Royal Infy. H.O.
Hull. Kingston Gen. H.O.
Ipswich & East Suffolk. Pre-reg. H.O.
Leeds R.H.B. Reg.
Leeds United Hosps. R.H.B. Sr. Reg.
Louth County Infy. Sr. H.O.
Maidenhead. Reg.
Manchester R.H.B. Reg.
Mid Glamorgan H.M.C. H.O.
Mitcham, Surrey. Wilson. Sr. H.O.
Newcastle Gen. Sr. H.O.
Northampton Gen. H.O.
Nottingham Gen. Pre-reg. H.O.
Nottingham Highbury. Sr. H.O.
Portsmouth Group H.M.C. Sr. H.O & Pre-reg H.O.
Richmond, Surrey. Royal. Sr. H.O.
Scotland. Western R.H.B. P.-t. Cons.
Scotland. Western R.H.B. Regs.
Sheffield City Gen. H.O.
St. Helen's & Dist. H.M.C. H.O.'s.
Wakefield. Clayton. Pre-reg. H.O.
Wakefield. Pinderfields Gen. Sr. H.O.

THORACIC SURGERY

Brompton, S.W.3. Sr. H.O. or Reg.
Cottingham (nr. Hull). Castle Hill. Jr. H.M.O.
Ilkley. Middleton. Sr. H.O.

UROLOGY

Edinburgh Northern Group of Hospa. H.O.

VENEREOLOGY

London, E.1. P.-t. Cons.

GENERAL

U.S.A. Bethesda. Cincinnati. Rotating Interns
Oxford United Hosps. Sr. H.O.
Canada. Grace Hosp., Winnipeg. Residencies & Sr. Internships.

GENERAL PRACTICE

Walsden, Todmorden. (Urban & Rural) List Approx. 1940.

NON-MEDICAL

Dundee Royal Infy. Biochemist.

PUBLIC APPOINTMENTS

Barbados Gen. Hosp. Specialist Anæsthetist.
Bedfordshire C.C. & Bedford Borough. Div. M.O. M.O.H. & School M.O.
Birmingham City. Temp. M.O.'s.
Factory Doctors. (Kincardine)
Govt. of U.K. of Libya. Path. & Bact.
H.M. Oversea Service, S. Pacific Health Service. M.O.'s
H.M. Oversea Civil Service, Somaliland. M.O.
H. M. Oversea Civil Service, Trinidad. Radiologist.
Ministry of Supply (Microbiological Research Dept., Porton) Safety Officer.
Nottinghamshire C.C. Sr. Clin. M.O. & Asst. County M.O.
Treasury Medical Service. P.-t. Local Treasury M.O.'s.
West Riding of Yorks. C.C. Asst. County M.O. & School H.O.

(Further particulars of above vacancies available on request to Advertisement Manager.)

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